09-20-00

A

JACKIE LEE DUKE
ATTORNEY COUNSELOR AT LAW
1001 WEST LOOP SOUTH • SUITE 100
HOUSTON, TEXAS 77027
TELEPHONE: (713) 964-6737
FACSIMILE: (713) 964-6738

INTELLECTUAL PROPERTY LAW
PATENT • TRADEMARK • COPYRIGHT
AND RELATED MATTERS

E-MAIL. JLDPATNLAW@AOL.COM

PATENT - Customer Number 21860
Docket No.: JLD-1096-US
Mailed on : September 19, 2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: Kermit L. Palmer

For: PREGROUTED BASEPLATE FOR SUPPORTING ROTATING MACHINERY

Hon. Commissioner of Patents and Trademarks
Box PATENT APPLICATION
Washington D.C. 20231

Sir:

Transmitted herewith is a **NON-PROVISIONAL APPLICATION FOR PATENT under 35 U.S.C. §111(a) and 37 C.F.R. §1.53(b)(1)**, including:
Twelve (12) Pages of Specification and Claims;
One Page of Abstract of the Disclosure;
Four (4) Sheets of Formal Drawings;
Executed Declaration and Power of Attorney;
Executed Assignment to C. R. Gregg & Associates, Inc.;
PTO-1595 Form;
Small Entity Declaration - Independent Inventor;
Small Entity Declaration - Corporation;
Check for $384.00 for Filing Fee (Fee Codes 201 and 202);
Check for $40.00 for Assignment Recording Fee (Fee Code 581); and,
Return Receipt Postcard.

Also enclosed is: Certificate of Mailing by Express Mail No. EK 304 443 682 US.

Please associate this application with Customer Number 21860.

The filing fee is calculated as follows:

Claims as Filed in Application		Base Fee
		$345.00 (Small Entity)(Fee Code 201)
Independent	4 - 3 = 1 x $39 =	$39.00
Total	20 - 20 = 0 x $9 =	$0.00
	Total Filing Fee =	$384.00

For your convenience, this transmittal letter is provided in triplicate. Should you wish to discuss this application with counsel for Applicant, please call Jackie Lee Duke at (713) 964-6737.

Date: September 19, 2000

Jackie Lee Duke

Jackie Lee Duke, Registry No. 33,378

C:\...\C. R. Gregg\Transmittal Letter to PTO for Application Filed 9-19-2000

PATENT
Docket No.: JLD-1096-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First/Sole Applicant: Kermit L. Palmer

Title: "PREGROUTED BASEPLATE FOR SUPPORTING ROTATING MACHINERY"

Small Entity Declaration - Independent Inventor(s)

As a below-named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35 United States Code, to the Patent and Trademark Office with regard to my above-identified invention described in the specification filed herewith. I have not assigned, granted, conveyed, or licensed — and am under no obligation under any contract or law to assign, grant, convey, or license — any rights in the invention to either (a) any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or (b) any concern which would not qualify as either (i) a small business concern under 37 CFR 1.9(d) or (ii) a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed — or am under an obligation under contract or law to assign, grant, convey, or license — any rights in the invention is listed below:

☐ There is no such person or organization.

☒ Any applicable person, concern, or organization is listed below:*

Full Name: C. R. Gregg & Associates, Inc.

Address: 908 Town and Country Blvd., Suite 550, Houston, Harris County, Texas 77024

I acknowledge a duty to file, in the above application for patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement if directed.

Signature of Sole/First Inventor

Kermit L. Palmer
Print Name of Sole/First Inventor

Date of Signature: 19 Sept 2000

*Note: A separate Small Entity Statement is required from any listed entity.

C:\...\C. R. Gregg\Kermit Palmer - Small Entity Declaration (1 Inventor)

PATENT
Docket No.: JLD-1096-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First/Sole Applicant: Kermit L. Palmer

Title: PREGROUTED BASEPLATE FOR SUPPORTING ROTATING MACHINERY

Small Entity Declaration - Small Business Concern

I hereby declare that I am

☐ the owner of the small business concern identified below:

☒ an officer of the small business concern empowered to act on behalf of the concern identified below:

Name of Concern: C. R. Gregg & Associates, Inc.

Address of Concern: 908 Town & Country Blvd., Suite 550, Houston, Harris County, Texas 77024

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 37 CFR 1.9(d) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35 United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above entitled invention of the above applicants and the specification filed herewith.

I acknowledge a duty to file, in the above application for patent, notification of any change in

status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement if directed.

Kermit L. Palmer — 19 Sept 2000

Signature of Officer of Small Business Concern — Date

Kermit L. Palmer, President

Name and Title of Officer

908 Town & Country Blvd., Suite 550, Houston, Harris County, Texas 77024

Address of Officer

C:\...\C. R. Gregg\C. R. Gregg & Assoc. - Small Entity Declaration (Corp)

PREGROUTED BASEPLATE FOR SUPPORTING ROTATING MACHINERY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a pregrouted baseplate for supporting rotating machinery commonly used in industrial processing and the method of its use and manufacture. This rotating machinery usually takes the form of pumps, commonly referred to as driven equipment, that is powered by electric motors or steam turbines, commonly referred to as drivers.

Typically, industrial processing plants use large quantities of pumps for moving materials, usually in a liquid or gaseous form, through the processing procedures. These pumps are powered by electric motors or steam turbines as noted above that are mounted adjacent to the pump and coupled thereto by drive couplings. These drive couplings allow for a small amount of misalignment between the output or driving shaft of the drivers, i.e., electric motor or steam turbine, and the input or driven shaft of the driven equipment. Precise alignment between these shafts is critical for the pump and motor assemblies to have a reasonable service life. A critical aspect of maintaining this precise alignment is that the pump and motor are mounted to a mounting base or baseplate as they are commonly referred to in the industry.

These baseplates have mounting pads or surfaces that are precisely machined to help ensure proper alignment between the pump and motor shafts discussed above. The mounting surfaces include threaded holes machined to accept mounting bolts that secure the pump and electric motor to the baseplate. The baseplates are then prepared for installation on a foundation in the plant. It is this preparation process that causes problems with the baseplates.

The aforementioned baseplates typically have been a substantially rectangular parallelepiped configuration with one of the large sides missing to form an open box. The interior of this box forms a large cavity that has been the bottom side of the baseplate with the mounting surfaces previously described formed on the top side. In order to add stiffness to the baseplate and reduce vibration from the pump and motor operation, the cavity on the bottom of the baseplate was filled with a grout material such as epoxy or a

cementitious material. The baseplate was then installed on a foundation in the plant and the motor and pump reattached. The problem with such a procedure is that the baseplate thus formed was distorted by the shrinkage of the grout material and the aforementioned precisely machined mounting surfaces were often out of tolerance. This resulted in increased vibration of the pump and motor assembly during operation and a shortened service life. The typical solution to date has been to try to remachine the mounting surfaces of the baseplate after the baseplate is installed on the foundation. This has produced less than desirable results as the machines used in the field cannot produce the desired tolerances and the cost of transporting and setting up these machines is prohibitive.

Therefore, there exists a need for a baseplate and the method of its use that will allow the use of epoxy or cementitious grouts while maintaining the required tolerances for the pump and motor mounting surfaces after installation. It is the construction and method of use of such a baseplate to which the present invention is directed.

2. Description of Related Art

U. S. Patent No. 2,916,233 to M. F. Ecker discloses a pump base that is grouted in place.

A machinery base pad for vibrating machinery is disclosed in U. S. Patent No. 5,149,050 to D. Smith et al. A plurality of channels and drains are provided to minimize environmental pollution from the lubricants vibrated out of the machine.

U. S. Patent No. 5,277,395 to D. Smith et al. is a continuation of U. S. Patent No. 5,149,050 and describes a machinery base pad with a plurality of I beams and tie down fastener subassemblies with a cementitious filler.

SUMMARY OF THE INVENTION

The pregrouted base plate of the present invention and the method of its use and construction is designed for use with rotating machinery such as pump and electric motor assemblies that are coupled together by a pair of shafts and require precise alignment of those shafts for a long and dependable service life. The pregrouted base plate is formed as a generally rectangular parallelepiped structure of suitably thick steel with one side open. The closed or top side of the pregrouted baseplate has a plurality of machined surfaces to which the pump and motor assemble will be bolted. This top surface may have

a plurality of vent and grout holes formed therein also. The bottom or open side of the baseplate forms a large cavity into which the grouting material will be poured. This cavity may also have a number of stiffening members or ribs welded in place to minimize distortion of the baseplate. In a typical application of the novel method, the baseplate has the pump and motor assembly removed therefrom and the baseplate is inverted, i.e., the lower cavity is facing upward. If the baseplate has any vent or grout holes as mentioned previously, these are closed off. The surface of the baseplate that will be in contact with the grout material is prepared and cleaned by suitable means as sanding, sandblasting or solvent cleaning to ensure proper adhesion with the grout material. The grout material, either epoxy or cementitious, is prepared and poured into the cavity. The grout material is then allowed to cure. In the case of cementitious grout, this can be up to five days. If epoxy grout is used and it is desired to accelerate the curing process, the baseplate with grout in place is postcured by maintaining an elevated temperature for a specified time period according to the grout manufacturer's instructions.

After the grouting material is completely cured, the baseplate is then placed on a table such as that of a horizontal boring mill and secured thereto. The mounting surfaces of the top of the baseplate are then checked for specified tolerances for levelness and flatness. The horizontal boring mill is then used to machine the mounting surfaces as required to bring the mounting surfaces into tolerance. Thus, a pregrouted baseplate is formed with the required grout material in position, properly cured and the mounting surfaces for the pump and motor assembly machined within tolerance. The pregrouted baseplate can then be installed on a foundation in the conventional manner.

One object of the present invention is to provide a method for producing a pregrouted baseplate that ensures the mounting surfaces for the pump and motor assembly are within tolerance after the grouting material is installed and cured.

Another object of the present invention is to provide a baseplate with a grouting material previously installed that is distortion free.

A further object of the present invention is to produce a baseplate free of air pockets or voids in the grout material.

Other objects and advantages of the present invention are pointed out in the claims annexed hereto and form a part of this disclosure. A full and complete understanding of

the invention may be had by reference to the accompanying drawings and description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and advantages of the present invention are set forth below and further made clear by reference to the drawings, wherein:

FIGURE 1 is an elevation view of a typical pump and motor assembly mounted on a pregrouted baseplate that is attached to a foundation.

FIGURE 2 is a perspective view of a baseplate with the pump and motor assembly removed.

FIGURE 3 is a perspective view of a baseplate showing the first step in producing the pregrouted baseplate.

FIGURE 4 is a perspective view of the pregrouted baseplate showing the grouting material in place and curing.

FIGURE 5 is a perspective view showing the pregrouted baseplate in place on a machining center and the mounting surfaces being machined to bring them into tolerance.

FIGURE 6 is a perspective view showing the pregrouted baseplate completed with the pump and motor assembly attached and ready for field installation.

FIGURE 7 is a perspective view of an alternate embodiment of a pregrouted baseplate with the pump and motor assembly removed.

FIGURE 8 is a perspective view of an alternate embodiment of a pregrouted baseplate showing the grouting material in place and curing.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, and particularly to FIGURE 1, an elevational view of a typical pump and motor assembly mounted on a baseplate that is attached to a foundation is shown. The pregrouted baseplate of the present invention is denoted generally by numeral 10. Pregrouted baseplate 10 has rotating machinery such as typical pump and motor assembly 12 mounted thereon. Pump and motor assembly 12 includes electric motor 14 connected to pump 16 by coupling shaft 18. Pregrouted baseplate 10 is secured to foundation or concrete slab 20 by suitable securing means such as anchor bolts 22 and nuts 24 cooperating with jack screws 25 in a manner to be described hereinafter. Foundation 20 is positioned on ground 26 at a suitable location within the

customer's plant. Grouting material 28 is seen on the underside of pregrouted baseplate 10.

Grouting material 28 may be inorganic, i.e., cementitious or organic, i.e., epoxy or a combination of both. Typically one or the other is used for a particular job. The novel method of creating pregrouted baseplate 10 will now be shown. As best seen in FIGURES 2 and 3, pregrouted baseplate 10 consists of frame 30 of a generally rectangular parallelepiped configuration. A plurality of mounting surfaces or pads 32 are shown on the top side of pregrouted baseplate 10. Mounting surfaces 32 are adapted to receive rotating machinery such as pump and motor assembly 12 (not shown) with drilled and tapped holes 34 receiving bolts to secure pump and motor assembly 12 thereto. Frame 30 is shown to be of fabricated welded steel construction although other suitable materials such as fiberglass or high strength plastic could be used without departing from the scope of the current invention. Frame 30 also includes grout fill holes 35 and vent holes 36 for reasons to be discussed hereinafter.

Frame 30 also includes anchor bolt holes 37 and jack screw holes 38 positioned at each corner. These are used in leveling and securing pregrouted baseplate 10 to foundation 20. Anchor bolts 22 are positioned in foundation 20 when it is poured to align with anchor bolt holes 37. When it is desired to secure pregrouted baseplate 10 to foundation 20, pregrouted baseplate 10 is placed over foundation 20 as shown in FIGURE 1. Anchor bolts 22 pass through anchor bolt holes 37 and then jack screws 25 are threaded through jack screw holes 38 until they contact foundation 20. Jack screws 25 are then used to level pregrouted baseplate 10. Once pregrouted baseplate 10 is leveled nuts 24 are tightened on anchor bolts 22 to secure pregrouted baseplate 10 and prevent any vertical movement. Wooden form 23, well known to those of ordinary skill in the art, is placed around foundation 20. Low viscosity epoxy grout 21 is then poured into the space between pregrouted baseplate 10 and foundation 20. Jack screws 25 will have been previously coated with a suitable material, such an grease, to ensure jack screws 25 do not stick to epoxy grout 21. After epoxy grout 21 is cured, jack screws 25 are removed and pregrouted baseplate 10 is bonded to foundation 20.

FIGURE 3 is a perspective view of frame 30 in an inverted position showing the first step in producing pregrouted baseplate 10. Frame 30 is open on the back or bottom

side to form cavity 39 into which a grouting material will be poured. Support members or ribs 40 are welded into cavity 39 to aid in stiffening and supporting frame 30. At this first step, frame 30 is supported on suitable supports 42 and inspected for levelness, and overall dimensional tolerances. After the dimensional tolerances are checked frame 30 is ready to be pregrouted.

As shown in FIGURE 4, grouting material 44 has been prepared and poured into cavity 39 of frame 30. Grouting material 44 is poured until it is approximately level with the top of frame 38 and the excess is then "screeded" off as is done in cement finishing and well known to those of ordinary skill in the art. Vent holes 36 and grout holes 35 are covered as noted above to prevent grouting material 44 from escaping. Frame 30 is typical of the frames used today and vent holes 36 are usually provided because the frames 30 are typically grouted in the field with frame 30 in the position of FIGURE 2. Applicant's novel method does not require vent holes 36 as any entrapped air from the curing grouting material 44 is vented on the open side of frame 30. Vent holes 36 and grout holes 35 are shown solely for the purpose of demonstrating that applicant's method is equally suitable for use with or without vent holes. Grouting material 44 may be an epoxy or cementitious composition as required.

If it is desired to accelerate the curing process and reduce the curing time, frame 30 with grouting material 44 in place, is maintained at an elevated temperature for a period of time as per the grouting material manufacturer's instructions. The elevated temperature at which the post curing will take place depends on the ambient conditions. If the ambient temperature is above 60° F., the elevated temperature typically will be 10° to 20° above the ambient temperature. When the ambient temperature is below 60° F., the elevated temperature will typically be in the range of 80° to 100° F. This step is important in applicant's novel method as it allows a faster, i.e. shorter, production time for pregrouted baseplate 10.

The next step in applicant's novel method of producing a pregrouted baseplate is shown in FIGURE 5. After a complete curing of grouting material 44 is achieved, pregrouted baseplate 10 is mounted in a suitable fixture 46 on a suitable machining center such as horizontal boring mill 48. Mounting surfaces 32 are then checked for dimensional tolerances such as flatness and parallelness. If required, cutting head 50 can then be

used to "true" mounting surfaces 32 by machining the surfaces as required. The reason this is required is the stresses imposed by the shrinking of grouting material 44 during curing can cause frame 30 of pregrouted baseplate 10 to distort and move mounting surfaces 32 out of flatness. It is this checking and truing of mounting surfaces 32 after the grouting of cavity 39 that is essential to applicant's invention.

The final step in producing pregrouted baseplate 10 is shown in FIGURE 6. Pregrouted baseplate 10 is returned to its normal upright position and pump and motor assembly 12 is reattached to mounting surfaces 32. Thus a pregrouted baseplate is produced with the grout in place and cured and the mounting surfaces of the baseplate "trued" after the grouting material is in place. This ensures that pregrouted baseplate 10 will not require additional machining after installation and that pump and motor assembly 12 are precisely aligned.

An alternate embodiment of the present invention in shown in FIGURES 7 and 8 that allows the use of an open frame. Pregrouted baseplate 100 consists of outer frame 102 of a generally rectangular configuration that is open on the top and bottom to form an open cavity therein. Outer frame 102 is shown constructed of channel 104 welded together to form outer frame 102. Although shown constructed of channel 104, it will understood by those of ordinary skill in the art other suitable structural shapes such as I beam or wide flange beam could be used in the construction of outer frame without departing from the scope of the present invention. Support members or ribs 106 are welded into place to further stiffen and strengthen outer frame 102.

A plurality of mounting surfaces or pads 108 are shown on the top side of pregrouted baseplate 100. Mounting surfaces 108 are adapted to receive rotating machinery such as pump and motor assembly 110 (not shown) with drilled and tapped holes 112 receiving bolts to secure pump and motor assembly 110 thereto. Outer frame 102 is shown to be of fabricated welded steel construction although other suitable materials such as fiberglass or high strength plastic could be used without departing from the scope of the current invention. Outer frame 102 also includes anchor bolt holes 114 and jack screw holes 116 positioned along each side of outer frame 102. Anchor bolt holes 114 and jack screw holes 116 function to level and secure pregrouted baseplate 100 to foundation 20 as in the first embodiment.

As best seen in FIGURE 8, when it is desired to pregrout pregrouted baseplate 100, outer frame 102 is supported on suitable supports 118 and inspected for levelness, and overall dimensional tolerances. After the dimensional tolerances are checked outer frame102 is ready to be pregrouted. A suitable grout retaining means secured as waxed plywood sheet 120 is secured to outer frame 102 by bolts 122 to form cavity 124. Waxed plywood sheet 120 is used to ensure grouting material 126 does not stick to sheet 120 while curing. Grouting material 126 is prepared and poured into cavity 124 of outer frame 102. Grouting material 126 is poured until it is approximately level with the top of outer frame 102 and the excess is then "screeded" off as is in the previous embodiment. If it is desired to accelerate the curing process and reduce the curing time, outer frame 102 with grouting material 126 in place, is maintained at an elevated temperature for a period of time as per the grouting material manufacturer's instructions. Once a full cure of grouting material 126 is reached, waxed plywood sheet 120 is removed and pregrouted baseplate 100 can then be trued and machined as in the first embodiment.

The novel method of use and construction of my pregrouted baseplate will be readily understood from the foregoing description and it will be seen that I have provided a novel method of producing a pregrouted baseplate that ensures the rotating machinery attached to the pregrouted baseplate will be properly aligned after installation and curing of the grouting material. Furthermore, while the invention has been shown and described with respect to certain preferred embodiments, it is obvious that equivalent alterations and modifications will occur to others skilled in the art upon the reading and understanding of the specification. The present invention includes all such equivalent alterations and modifications, and is limited only by the scope of the appended claims.

What is claimed is:

1. A method for preparing and installing a baseplate for supporting rotating machinery, comprising:

preparing and pouring a grouting material into a cavity in a baseplate;

curing said grouting material to achieve desired physical properties for said grouting material;

checking the mounting surfaces adapted for supporting a piece of rotating machinery on said baseplate for specified tolerances;

placing said baseplate in a fixture to allow machining of said mounting surfaces;

machining said mounting surfaces adapted for supporting a piece of rotating machinery on said baseplate to a specified tolerance; and,

installing a piece of rotating machinery on said machined mounting surfaces.

2. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 1, including the steps of:

accelerating the curing of said grouting material by maintaining said baseplate at an elevated temperature for a specified time period.

3. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 2, further including the steps of:

securing said baseplate to a foundation;

leveling said baseplate;

placing a form around said baseplate and said foundation; and,

pouring a grouting material into the void between said baseplate and said foundation.

4. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 3, wherein:

said grouting material is an organic grout.

5. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 1, including the steps of:

ensuring the curing of said grouting material by curing said grouting material for a specified time period.

6. A method for preparing and installing a baseplate for supporting rotating

machinery, according to Claim 5, further including the steps of:

securing said baseplate to a foundation;

leveling said baseplate;

placing a form around said baseplate and said foundation; and,

pouring a grouting material into the void between said baseplate and said foundation.

7. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 6, wherein:

said grouting material is an inorganic grout.

8. A pregrouted baseplate for supporting rotating machinery, comprising:

a frame of a rectangular parallelepiped configuration, said frame open on one side to form a cavity for receiving a grouting material;

a plurality of support members disposed in said cavity to support said rectangular parallelepiped frame;

said cavity having a grouting material poured into said cavity and cured in said cavity, said grouting material being cured to achieve desired physical properties; and,

said rectangular parallelepiped frame including a plurality of mounting surfaces adapted for supporting a piece of rotating machinery, said mounting surfaces machined to a specified tolerance after said grouting material is cured.

9. A pregrouted baseplate for supporting rotating machinery, according to Claim 8, wherein:

said grouting material is an organic grout.

10. A pregrouted baseplate for supporting rotating machinery, according to Claim 8, wherein:

said grouting material is an inorganic grout.

11. A pregrouted baseplate for supporting rotating machinery, comprising:

a frame of a rectangular configuration with an open cavity therein;

a plurality of support members secured to said rectangular frame;

said cavity having a grouting material poured into said cavity and cured in said cavity, said grouting material being cured to achieve desired physical properties; and,

said rectangular frame including a plurality of mounting surfaces adapted for

supporting a piece of rotating machinery, said mounting surfaces machined to a specified tolerance after said grouting material is cured

12. A pregrouted baseplate for supporting rotating machinery, according to Claim 11, wherein:

said grouting material is an organic grout.

13. A pregrouted baseplate for supporting rotating machinery, according to Claim 11, wherein:

said grouting material is an inorganic grout.

14. A method for preparing and installing a baseplate having an open frame configuration for supporting rotating machinery, comprising:

securing a grout retaining means to a baseplate to form a cavity therein;

preparing and pouring a grouting material into said cavity in said baseplate;

curing said grouting material to achieve desired physical properties for said grouting material;

removing said grout retaining means from said baseplate;

checking the mounting surfaces adapted for supporting a piece of rotating machinery on said baseplate for specified tolerances;

placing said baseplate in a fixture to allow machining of said mounting surfaces;

machining said mounting surfaces adapted for supporting a piece of rotating machinery on said baseplate to a specified tolerance; and,

installing a piece of rotating machinery on said machined mounting surfaces.

15. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 14, including the steps of:

accelerating the curing of said grouting material by maintaining said baseplate at an elevated temperature for a specified time period.

16. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 15, further including the steps of:

securing said baseplate to a foundation;

leveling said baseplate;

placing a form around said baseplate and said foundation; and,

pouring a grouting material into the void between said baseplate and said

foundation.

17. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 16, wherein:

said grouting material is an organic grout.

18. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 14, including the steps of:

ensuring the curing of said grouting material by curing said grouting material for a specified time period.

19. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 18, further including the steps of:

securing said baseplate to a foundation;

leveling said baseplate;

placing a form around said baseplate and said foundation; and,

pouring a grouting material into the void between said baseplate and said foundation.

20. A method for preparing and installing a baseplate for supporting rotating machinery, according to Claim 18, wherein:

said grouting material is an inorganic grout.

Abstract of the Disclosure

A pregrouted base plate and the method of its use and construction with rotating machinery such as pump and electric motor assemblies that are coupled together by a pair of shafts and require precise alignment of those shafts for a long and dependable service life is disclosed. The pregrouted base plate is formed as a generally rectangular parallelepiped structure with one side open. The novel method of its use includes pregrouting the baseplate before installation, curing the grout and machining the mounting surfaces for the rotating machinery before field installation to ensure precise alignment of the pump and motor shafts. A second embodiment is shown with an open frame having two sides open.

Fig. 1

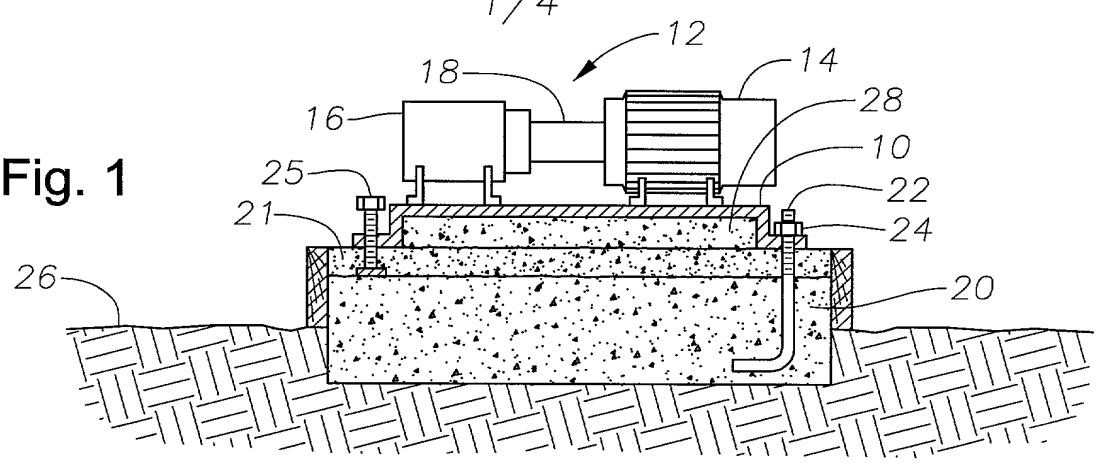


Fig. 2

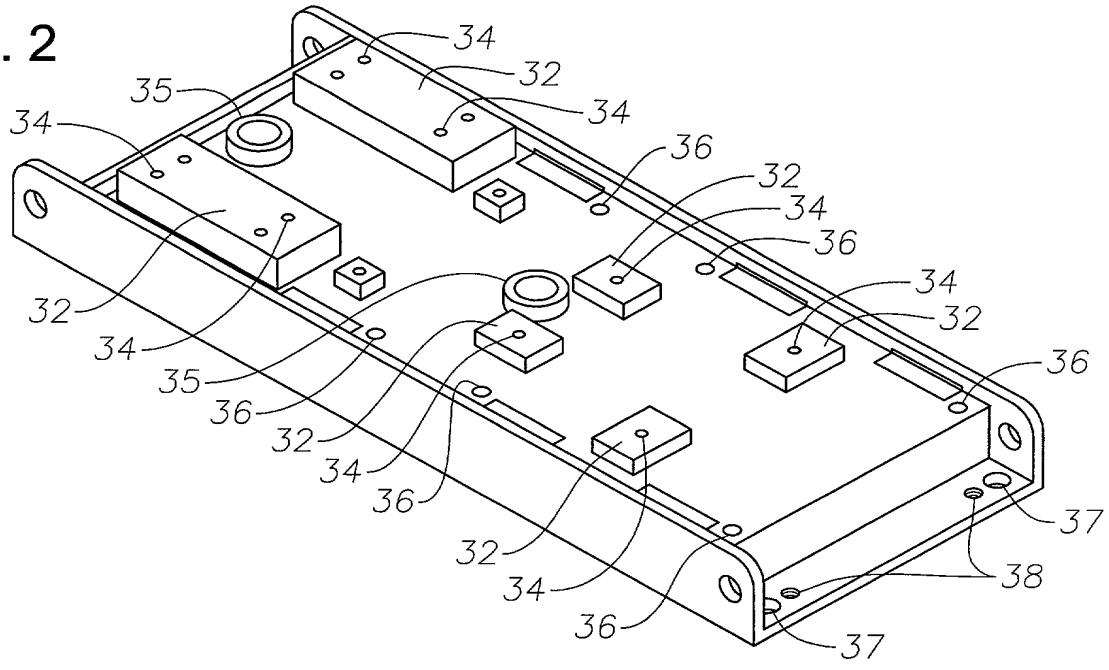
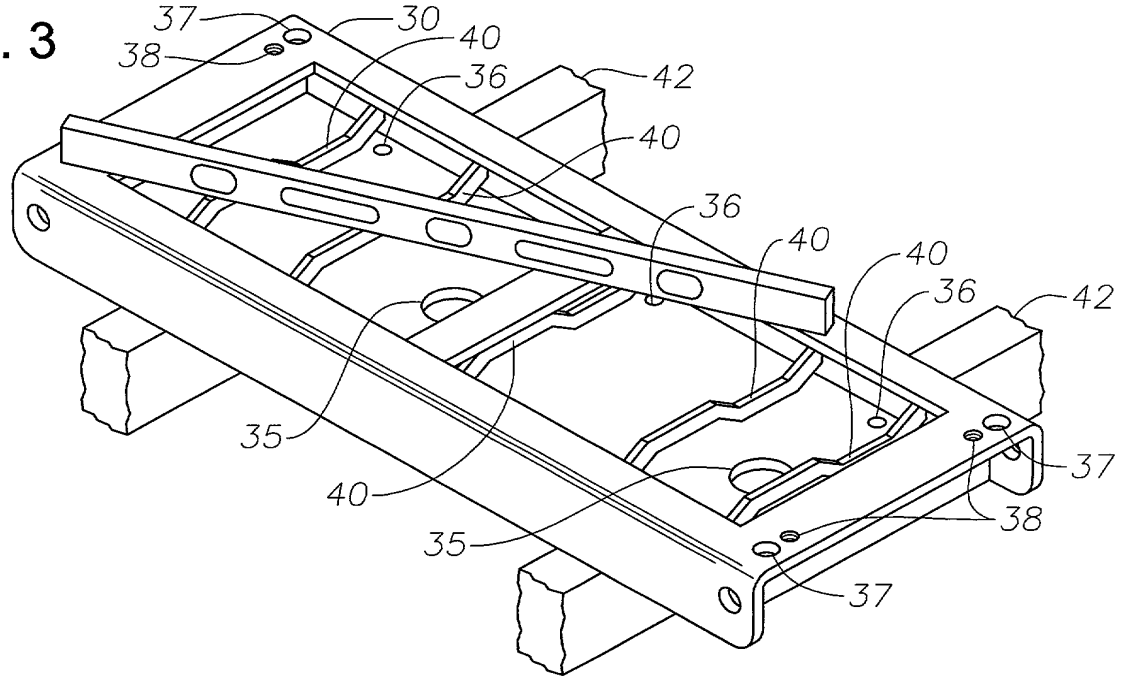


Fig. 3



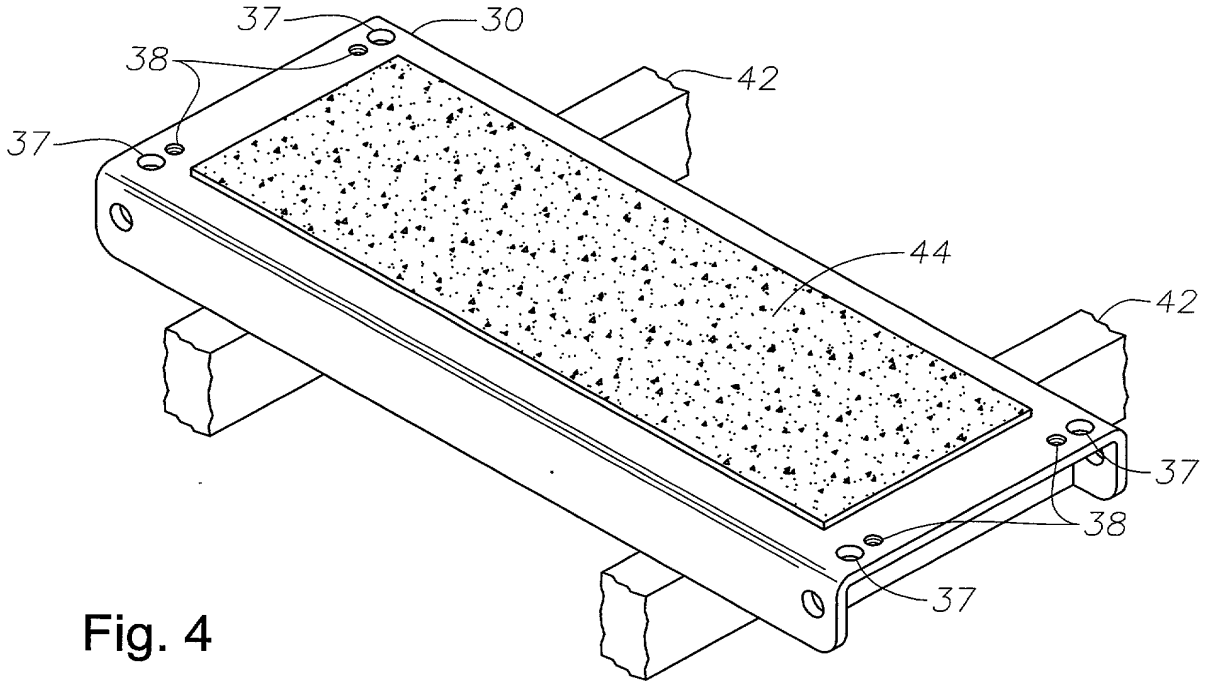


Fig. 4

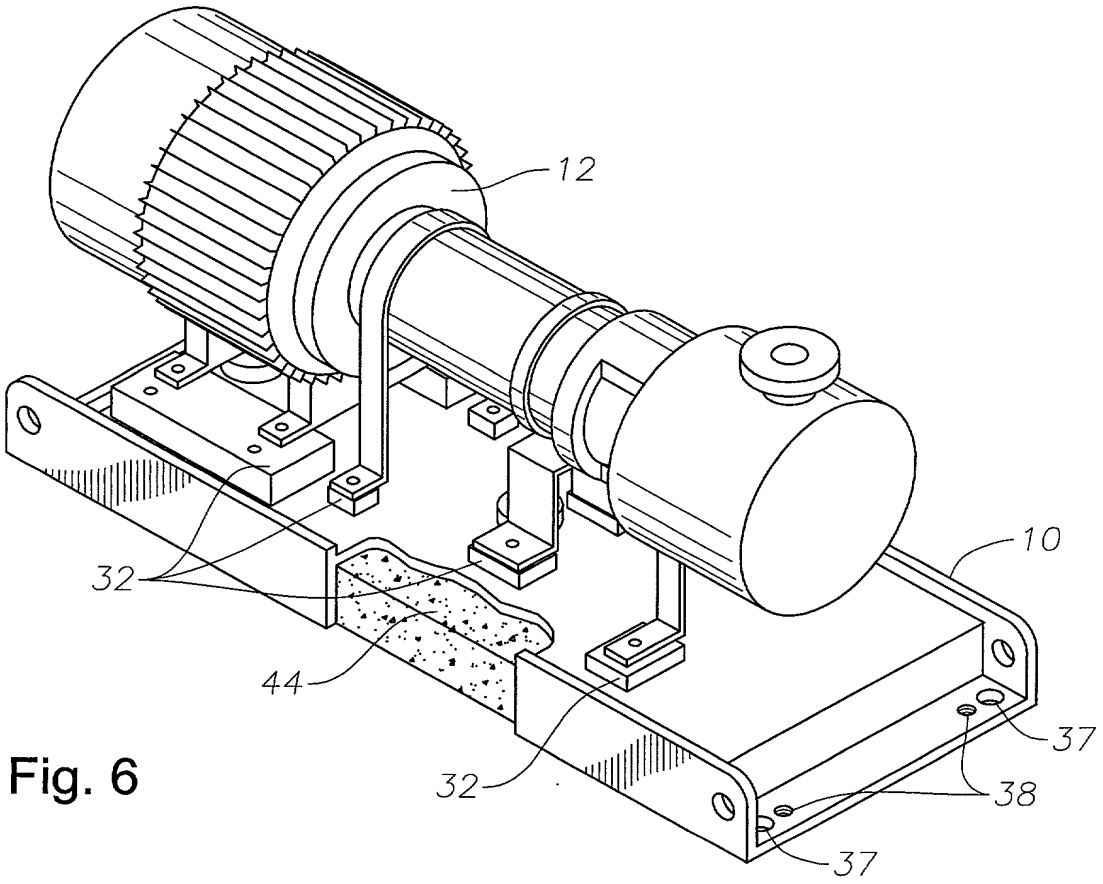


Fig. 6

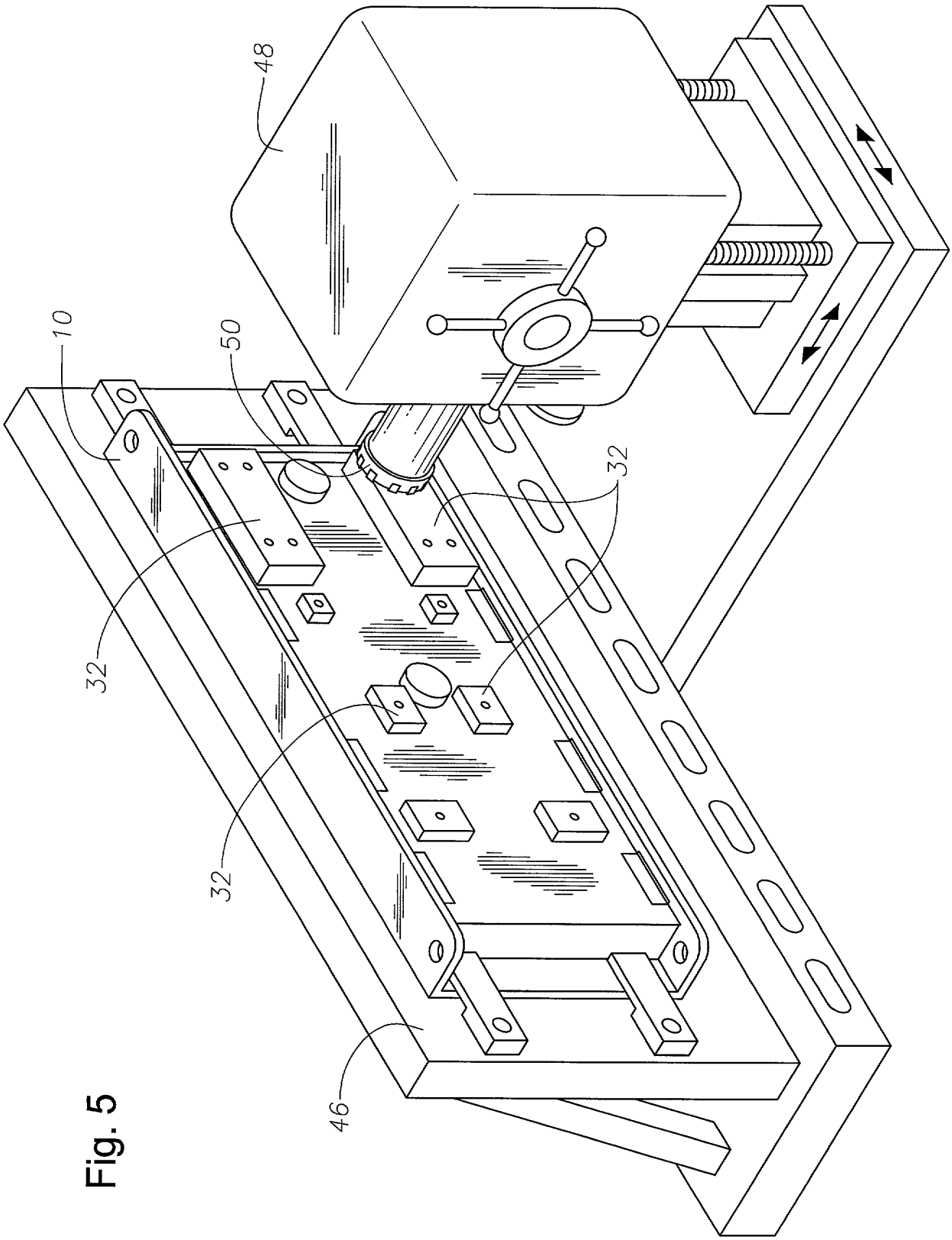


Fig. 5

Fig. 7

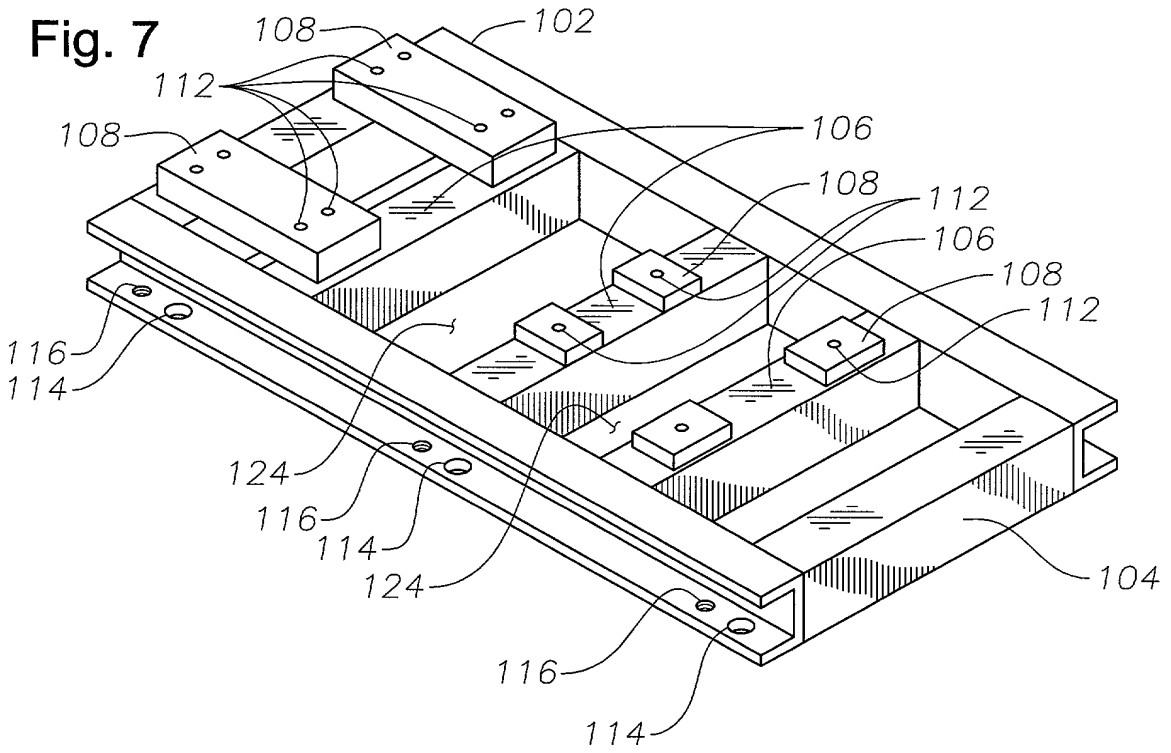
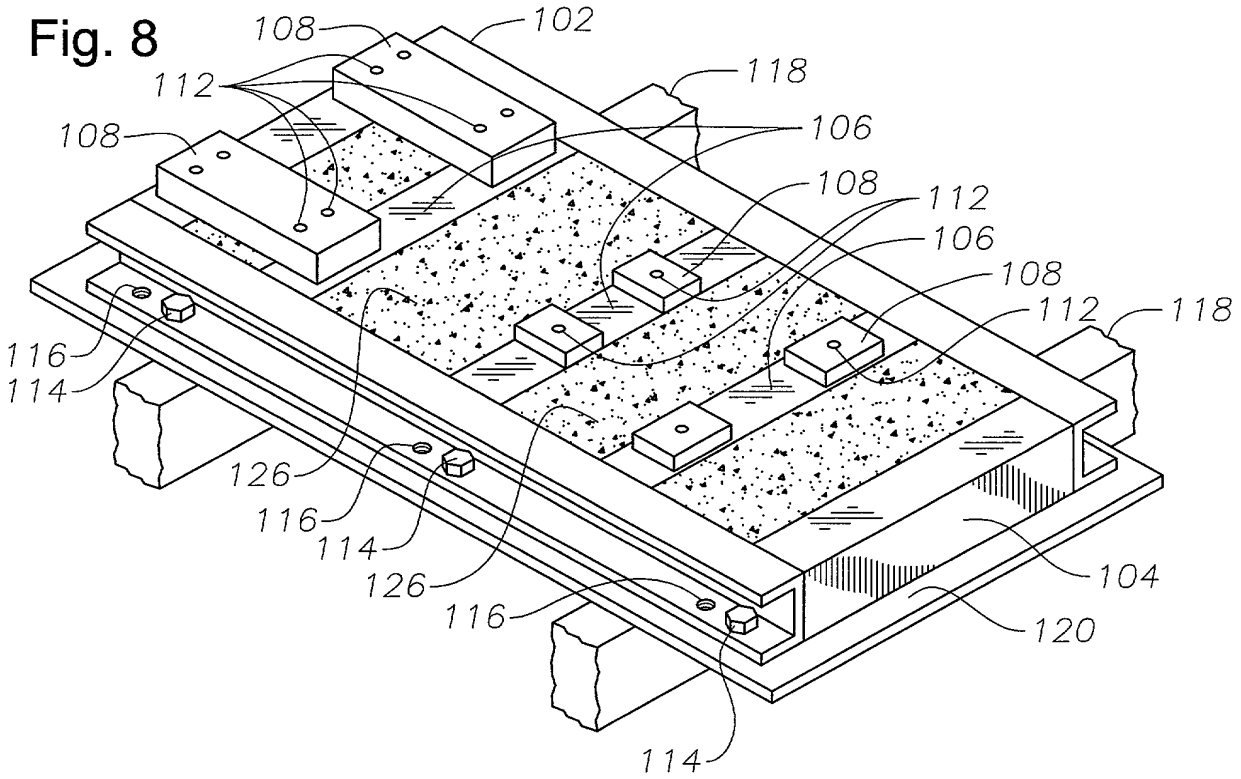

108
102
112
108
106
108
112
106
108
112
116
114
124
116
114
124
104
116
114

Fig. 8


108
102
118
112
108
106
108
112
106
108
112
118
116
114
126
116
114
126
104
116
120
114

PATENT
Docket Number: JLD-1096-US

DECLARATION AND POWER OF ATTORNEY

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name; that I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled PREGROUTED BASEPLATE FOR SUPPORTING ROTATING MACHINERY, the specification of which is attached hereto. I hereby state that I have reviewed and understand the contents of the attached specification, including the claims. I acknowledge the duty to disclose information which is material to the examination of the application in accordance with Sec. 1.56(a), Title 37, Code of Federal Regulations.

I hereby appoint the following attorney to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: Jackie Lee Duke, Registry No. 33,378; whose address is 1001 West Loop South, Suite 100, Houston, Texas 77027-9009. Address all telephone calls to Jackie Lee Duke at (713) 964-6737.

Address all correspondence to:

Jackie Lee Duke
Attorney at Law
1001 West Loop South, Suite 100
Houston, Texas 77027

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and may jeopardize the validity of the application or any patent issuing thereon.

Kermit L. Palmer

Date: 19 Sept. 2000

Citizenship:

United States of America

Residence:

64 Ambleside Crescent
Sugarland, Texas 77479
United States of America

Post Office Address:

64 Ambleside Crescent
Sugarland, Texas 77479
United States of America